

# PATENT COOPERATION TREAT

## **PCT**

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

| INTERNATI  | ONAL PRELIMINARY EXAMIN   |   |
|--|---|---|
| Instation internation  | (PCT Article 36 and Rule 70)  | 519,571   |
| applicant's or agent's file reference  | FOR FURTHER ACTION SeeNotification Examination  | ationofTransmittalofInternational Preliminar<br>on Report (Form PCT/IPEA/416)   |
| NE+03P112  nternational application No.  PCT/JP2003/008360   | International filing date (day/month/year) 01 July 2003 (01.07.2003)  | Priority date (day/month/year) 02 July 2002 (02.07.2002)  |
| International Patent Classification (IPC) of H01L 21/205, C23C 16/01, 16   | national classification and IPC<br>/34, C30B 29/38  |   |
| Applicant  | NEC CORPORATION   |   |
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| This report is also accomnamended and are the basing 70.16 and Section 607 of These annexes consist of   | panied by ANNEXES, i.e., sheets of the descrease for this report and/or sheets containing rectified the Administrative Instructions under the PC a total of1 sheets.  | iption, claims and/or drawings which have of<br>fications made before this Authority (see F   |
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| This report is also accommamended and are the basing 70.16 and Section 607 of these annexes consist of these annexes consist of the report contains indications.  I Basis of the report priority  III Priority  IV Lack of unity of the Reasoned state citations and experiences.  | panied by ANNEXES, i.e., sheets of the description of this report and/or sheets containing rectified the Administrative Instructions under the PC a total of 1 sheets.  The atotal of 1 sheets.  The relating to the following items:  The relating to the following items: | iption, claims and/or drawings which have diffications made before this Authority (see Fr).  T).  The step and industrial applicability   |
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| This report is also accommamended and are the basing 70.16 and Section 607 of These annexes consist of These annexes cons | panied by ANNEXES, i.e., sheets of the description of this report and/or sheets containing rectified Administrative Instructions under the PC a total of 1 sheets.  relating to the following items:  nent of opinion with regard to novelty, invention finvention  ement under Article 35(2) with regard to nove explanations supporting such statement then the cited as in the international application wations on the international application  Date of comp  | iption, claims and/or drawings which have diffications made before this Authority (see Fr).  T).  The step and industrial applicability   |

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### INTERNATIONAL PRELIMINARY EXAMINATION REPORT

| I. Basis of the report |   |   |   |  |  |  |  |  |  |
|------------------------|---|---|---|--|--|--|--|--|--|
| 1.                     | 1. With regard to the elements of the international application:* |   |   |  |  |  |  |  |  |
|                        |   | the inter   | rnational application as originally filed   |  |  |  |  |  |  |
|                        | $\boxtimes$   | the desc  | cription:   |  |  |  |  |  |  |
|                        |   | pages   | 1-29 , as originally filed  |  |  |  |  |  |  |
|                        |   | pages.  | , filed with the demand   |  |  |  |  |  |  |
|                        |   | pages   | , filed with the letter of  |  |  |  |  |  |  |
|                        | $\boxtimes$   | the clair   |   |  |  |  |  |  |  |
|                        |   | pages   |   |  |  |  |  |  |  |
|                        |   | pages   | , as amended (together with any statement under Article 19, filed with the demand   |  |  |  |  |  |  |
|                        |   | pages   | 31, 32, filed with the letter of 27 November 2003 (27.11.2003)  |  |  |  |  |  |  |
|                        |   | pages   | , into with the total or  |  |  |  |  |  |  |
|                        | $\boxtimes$   | the dra   | as originally filed   |  |  |  |  |  |  |
|                        |   | pages   | filed with the demand   |  |  |  |  |  |  |
|                        |   | pages<br>pages  | , filed with the letter of  |  |  |  |  |  |  |
|                        | _   | •   |   |  |  |  |  |  |  |
|                        |   | •   | ence listing part of the description:   |  |  |  |  |  |  |
|                        |   | pages   | , as originally filed, filed with the demand  |  |  |  |  |  |  |
|                        |   | pages<br>pages  | , filed with the letter of  |  |  |  |  |  |  |
|                        | the The   | internation internation is each element the large of the | d to any nucleotide and/or amino acid sequence disclosed in the international application, the international examination was carried out on the basis of the sequence listing:  ined in the international application in written form.  together with the international application in computer readable form.  shed subsequently to this Authority in written form.  shed subsequently to this Authority in computer readable form.  statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the |  |  |  |  |  |  |
|                        |   | The s   | national application as filed has been furnished.  statement that the information recorded in computer readable form is identical to the written sequence listing has furnished.  |  |  |  |  |  |  |
|                        | 4. 🛭  |   | the description, pages the claims, Nos30 the drawings, sheets/fig   |  |  |  |  |  |  |
|                        | 5. [  | 니 beyon   | report has been established as if (some of) the amendments had not been made, since they have been considered to go and the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**   |  |  |  |  |  |  |
|                        | in<br>an  | this repo<br>ed 70.17).   |   |  |  |  |  |  |  |
|                        |   |   | ement sheet containing such amendments must be referred to under item 1 and annexed to this report.   |  |  |  |  |  |  |

| r |                               |  |
|---|-------------------------------|--|
| ۱ | V. Reasoned statement under A | rticle 35(2) with regard to novelty, inventive step or industrial applicability; |
| ١ | citations and explanations su | pporting such statement  |

| citations and explanations supporting such statement |        |  |                                     |  |  |  |
|--|--------|--|-------------------------------------|--|--|--|
| Statement  |        |  |                                     |  |  |  |
| Novelty (N)  | Claims | 1-29, 31, 32   | YES                                 |  |  |  |
| 210.029 (2.)   | Claims |  | NO                                  |  |  |  |
|  | Claims | 1-29, 31, 32   | YES                                 |  |  |  |
| inventive step (15)                                  |        |  | МО                                  |  |  |  |
| - 1  | Claims | 1-29, 31, 32   | YES                                 |  |  |  |
| Industrial applicability (IA)                        | Claims |  | NO                                  |  |  |  |
|  |        | Statement  Novelty (N)  Claims  Claims  Inventive step (IS)  Claims  Claims  Industrial applicability (IA)  Claims | Novelty (N)   Claims   1-29, 31, 32 |  |  |  |

#### 2. Citations and explanations

Document 1: EP 1271627 A2 (NEC Corp.), 2 January 2003

Document 2: JP 2003-178984 A (NEC Corp.), 27 June 2003

Document 3: JP 2002-343718 A (Matsushita Electric

Industrial Co., Ltd.), 29 November 2002

Document 4: JP 2002-050585 A (Hitachi Cable Co., Ltd.),

15 February 2002

Document 5: JP 2001-223165 A (Hitachi Cable Co., Ltd.),

17 August 2001

#### Claims 1-29, 31 and 32

None of the documents cited in the international search report, except for documents 1 and 2 from the same applicant, discloses a process for manufacturing a group III nitride semiconductor substrate which includes a step of forming a group III nitride semiconductor layer including voids, on top of a film containing a metal element, and in contact therewith.